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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,094	09/12/2003	Kirsty Jane Dodgson	875.092US1	7668

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EXAMINER	
HINES, JANA A	

ART UNIT	PAPER NUMBER
1645	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/661,094	DODGSON, KIRSTY JANE	
	Examiner	Art Unit	
	JaNa Hines	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-9,13-31 and 44-60* is/are pending in the application.

4a) Of the above claim(s) *2,3,5-7,13,14,20-22,24 and 26-31* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,8,9,15-19,23,25 and 44-60* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 9, 2009 has been entered.

Amendment Entry

2. The amendment filed February 9, 2009 has been entered. Claims 1 and 54 have been amended. Claims 2-3, 5-7, 13-14, 20-22, 24 and 26-31 are withdrawn from consideration. Claims 4, 10-12 and 32-43 are cancelled. Claims 58-60 have been newly added. Claims 1, 8-9, 15-19, 23, 25 and 44-60 are under consideration in this office action.

Response to Arguments

3. Applicant's arguments filed February 9, 2009 have been fully considered but they are not persuasive.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. The written description rejection of claims 1, 8-9, 15-19, 23, 25 and 44-60 under 35 U.S.C. 112, first paragraph, is maintained for reasons of record.

The rejection is maintained for reasons already of record. The rejection is on the grounds that the specification teaches the structure of only a single representative species of SEQ ID NO:2, 3 and 4 and the specification fails to describe any other representative species by any identifying characteristics or properties other than the functionality of hybridizing to SEQ ID NO:2, 3 or 4. Given this lack of description of representative species encompassed by the genus of the claim, the specification fails to sufficiently describe the claimed invention in such full, clear, concise, and exact terms that a skilled artisan would recognize that applicants were in possession of the claimed invention. With respect to claims 1, 8, 9 and 46-49, there is no description of polypeptides having at least 80%, 85%, 90%, 95% or 97% sequence identity to SEQ ID NO:2, 3 or 4. Also there is no support for the probes consisting of no more 40 nucleotides or primers consisting of 15 to 40 nucleotides which include SEQ ID NO:2 or 4.

Applicants argue that the Office can not reasonably contend that an at least 80% contiguous nucleic acid sequence does not convey a common structure or function. However, there is no teaching regarding which 20% of the nucleotides can vary from SEQ ID NO:2, 3 or 4 and still results in oligonucleotides that form effective hybrids to thereby detect or determine the presence or amount of hybrid formation to be indicative of detect *vanA* in a sample. Furthermore, there is no disclosed or art-recognized correlation between any structures other than SEQ ID NO:2, 3 or 4. It is noted that

applicants have failed to provide a disclosed or art-recognized correlation between any structure other than SEQ ID NO:2, 3 or 4 and the citation of molecular microbiology books. The recitation of probes/primers hybridizing does not convey a common structure or function. No information, beyond the characterization of a probes having SEQ ID NO:3 and primers having SEQ ID NO:2 and 4 have been provided, which would indicate that applicants were not in possession of the claimed genus of any probes and primers that consist of 15 to 40 nucleotides with at least 80% sequence identity to SEQ ID NO:2, 3 or 4.

It is noted that applicants recitation of how many nucleotide substitutions are necessary is not persuasive to provide sufficient written description when there is no description of probes consisting of up to 40 nucleotides or primers consisting of 15 to 40 nucleotides, when SEQ ID NO:2, 3 and 4 do not have 40 nucleotides. There is no description of what the additional nucleotides are. There is no description of a probe or primer that has at least 80% sequence identity to a sequence with additional unknown nucleotides. The specification fails to describe any other representative species by any identifying characteristics or properties. Therefore determining how many nucleotides may be substituted with SEQ ID NO: 2, 3 or 4 does not provided a description of sequences with no more than 40 nucleotides. Likewise, the specification does not place any structure, chemical functional limitations on the polynucleotide probe or primer.

It is further noted that the teaching of Patel et al., do not provide sufficient written description concerning probes consisting of up to 40 nucleotides or primers consisting of 15 to 40 nucleotides, when SEQ ID NO:2, 3 and 4 do not have 40 nucleotides; a

description of what the additional nucleotides are or probes or primers that have at least 80% sequence identity to a sequence with additional unknown nucleotides.

Since the disclosure fails to describe the common attributes or structural characteristics that identify the members of the genus, and because the genus of nucleic acid molecules of is highly variable, the function of hybridization alone is insufficient to describe the genus of nucleic acid molecules. The specification fails to describe any other representative species by any identifying characteristics or properties. Therefore the full breadth of the claims fails to meet the written description provision of 35 USC 112, first paragraph and the rejection is maintained.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. The new matter rejection of claims 1, 8-9, 15-19, 23, 25 and 44-60 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement is maintained.

The rejection is on the grounds that neither the specification nor originally presented claims provides support for the instantly claimed method to detect *vanA* in a sample.

Applicants' point to the originally filed claim 1 and 32 for support. However neither claim recites a *vanA*-specific oligonucleotide probe consisting of no more than 40 nucleotides; or a sequence with at least 80% contiguous nucleic acid sequence identity to SEQ ID NO:3. Applicants point to the definition of "primer" at pages 10-11, however the definition says that the primer combines with a single stranded target to form a double stranded hybrid; the primer does not form a double stranded hybrid with itself or the complement of itself. Furthermore, the primer requires the presence of a polymerase, and appropriate reagents and conditions to result in nucleic acid synthesis. Additionally, the comparison in the specification is different than the comparison of the instant claims. The specification provides support for comparing the probes and the target, while the claim compares the probe to SEQ ID NO:3, and not the target.

There is no recitation of a first and second oligonucleotide primer wherein the first primer has a sequence with at least 80% contiguous nucleic acid sequence identity to SEQ ID NO:2, and the second oligonucleotide primer has a sequence with at least 80% contiguous nucleic acid sequence identity to SEQ ID NO:4. There is no description of a first or second primer effective to form a double stranded hybrid with the complement of SEQ ID NO:2 or 4. Applicants point to the definition of "probe" at pages 10-11, however the definition says that the probes combines with a single stranded target to form a double stranded hybrid; the probe does not form a double stranded hybrid with itself or the complement of itself.

Applicants' assert that the is support for having probes or primers having 80% of the target sequences. The specification discloses oligonucleotides corresponding to

nucleotides 851-868 of SEQ ID NO:2, nucleotides 870-896 of SEQ ID NO:3 and 898 to 917 of SEQ ID NO:4 for support of probes and primers consisting of 15 to 40 nucleotides with at least 80% nucleic acid sequence identity to SEQ ID NO:2, 3 or 4 or the complement of each which hybridizes to SEQ ID NO:2, 3 or 4. However, there is no teaching of a first oligonucleotide primer that has at least 80% nucleic acid sequence identity to SEQ ID NO:2 or 4. There is no teaching that the probe be at least 80% contiguous nucleic acid sequence identity to SEQ ID NO:2, 3 or 4. There appears to be no "contiguous" requirement within the specification. Furthermore, there is no recitation of the probe or primer which is effective to form a double stranded hybrid with SEQ ID NO:2, 3 or 4 or its complement. Therefore applicants' are requested to page and line number support.

Despite applicants' assertions and pointing to support within the specification, it appears that the entire specification appears to fail to recite support for the *vanA* specific oligonucleotide probe and oligonucleotide primers. Thus, applicants' arguments are not persuasive and the rejection is maintained.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. The rejection of claims 1, 8-9, 15-19, 23, 25 and 44-60 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly

claim the subject matter which applicant regards as the invention is maintained for reasons of record.

A) Claim 1 is unclear. Claim 1 recites forming a double stranded hybrid with amplified *vanA* nucleic acid from the sample with a *vanA*-specific oligonucleotide probe. The claims descries the probe as 1) consisting of no more than 40 nucleotides; 2) has a sequence with at least 80% contiguous nucleic acid sequence identity to SEQ ID NO:3 or the complement of SEQ ID NO:3; 3) the sequence of the probe with at least 80% contiguous nucleic acid sequence identity to the complement of SEQ ID NO:3 or SEQ ID NO:3 is one which is effective to form a double stranded hybrid with SEQ ID NO:3 or its complement respectively. However if the probe forms a double stranded hybrid with the amplified *vanA* from the sample, it is unclear how that same probe forms a double stranded hybrid with SEQ ID NO:3 or its complement respectively. Furthermore, it is unclear if how the formation of 2 separate double stranded hybrids further defines the method of detecting *vanA*.

B) The first and second oligonucleotide primers have sequences with at least 80% contiguous nucleic acid sequence identity to SEQ ID NO:2 or 4, wherein the sequence of the first and second primer are effective to form a double stranded hybrid with the complement of SEQ ID NO:2 or 4. However the primers are used to amplify the *vanA* from the sample thus it is unclear how or why the primer forms a double stranded hybrid with its respective complement. It is unclear how this recitation further limits the claims. Therefore, it is suggested that the claim language clarify the characteristics of each component in a clear and concise manner.

C) Claims 1 is still unclear. The amendment to claim 1 drawn to a probe of no more than 40 nucleotides does not overcome the rejection. The rejection is on the grounds that a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c).

In the instance case, the claims are still drawn to a first and second oligonucleotide primer each consisting of 15 to 40 nucleotides, wherein a first oligonucleotide primer has at least 80% contiguous nucleic acid sequence identity to SEQ ID NO:2; and a second oligonucleotide primer has at least 80% contiguous nucleic acid sequence identity SEQ ID NO:4.

Applicants assert that the term hybrid and hybridization procedures are well known in the art; however the issue is not the use of term "hybrid." The issue is that the specification recites that the nucleic acid hybrid preferably has more than 14 to 50 nucleotides in length. SEQ ID NO:2 has 18 amino acids, and SEQ ID NO:4 has 20 amino acids. The closed "consisting of" language does not clarify the claim because the phrase limits the nucleotides to exactly what is described by SEQ ID NO:2 and 4 and does not provide for additional undisclosed nucleotides. Claim 1 recites the broad limitation of primers consisting of 15 to 40 nucleotides, yet the narrower statement of the range/limitation is drawn to SEQ ID NO:2 and 4 which do not have 40 nucleotides; the sequences have 18 and 20 nucleotides respectively. The claims and specification fail to disclose what the other 22 or 20 nucleotides are. Thus the metes and bounds of the

claim cannot be ascertained by one of ordinary skill in the art and clarification is required to overcome the rejection. Therefore applicants' assertions are not persuasive and the rejection is maintained.

D) The phrase "effective to form a double stranded hybrid" in the claim is a relative term which renders the claim indefinite. The phrase is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term effective is a term of degree and based upon parameters that are not defined in the specification or the claims. The specification teaches that highly stringent conditions are sequence-dependant and will be different in different circumstances. As such, the phrase is dependant upon specific conditions that are not recited in the claims and specification fails to define the metes and bounds of the phrase. Therefore one skilled in the would not be readily apprised as to the metes and bounds of creating double stranded hybrids. Therefore, clarification is required to overcome the rejection.

For instance, claim 1 needs to recite the precise hybridization conditions in order to overcome the rejection. For instance, the specification at pages 21-22 teaches specific conditions such as having a PCR reaction mixtures containing 50mM KCl, 10mM Tris-HCl pH 8.3, 2.5 mM MgC12, 0.4/zm of each of the two primers, 200 uM of each of the four dNTPs and 1.25 Units of Taq DNA polymerase (Perkin Elmer). PCR reactions are then subjected to thermal cycling (3 minutes at 95°C followed by 30 cycles of 1 second at 95°C and 1 second at 55°C) using a Perkin Elmer 480 ^{TM} thermal cycle

and subsequently analyzed by standard ethidium bromide-stained agarose gel electrophoresis. As such, the action of hybridizing is dependant upon specific conditions that are not recited in the claims and specification fails to define the metes and bounds of the phrase. Therefore one skilled in the art would not be readily apprised as to the metes and bounds of the forming double stranded hybrids. While it is noted that claim 56 recites a few limitations on the sequence of the probes and primers, this limitation does not overcome the need for the appropriate hybridization language in the claims. Therefore, the rejection is maintained.

Conclusion

7. No claims allowed.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ja-Na Hines whose telephone number is 571-272-0859. The examiner can normally be reached Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Robert Mondesi, can be reached on 571-272-0956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/JaNa Hines/

Examiner, Art Unit 1645

/Mark Navarro/

Primary Examiner, Art Unit 1645